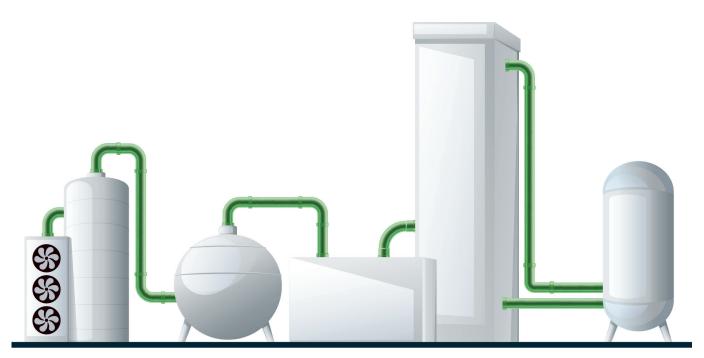
# Valves for use in air separation plants



Cryogenic air separation is one of the most proven methods for breaking air into its components on a large scale.

During cryogenic air separation, the ambient air is first sucked in through a filter and compressed. The air is then cooled and unwanted contaminants such as dust and carbon dioxide are removed in the absorbers. Through heat exchange and expansion, the air is further cooled until it reaches a temperature between  $-170\,^{\circ}$ C and  $-193\,^{\circ}$ C. Components of the air can be liquefied based on the different pressure levels and temperatures and thus separated from others before they are made available in storage tanks or as gas.





AIR COMPRESSION AND COOLING



PURIFICATION, COOLING AND COLD PRODUCTION UP TO LIQUEFACTION

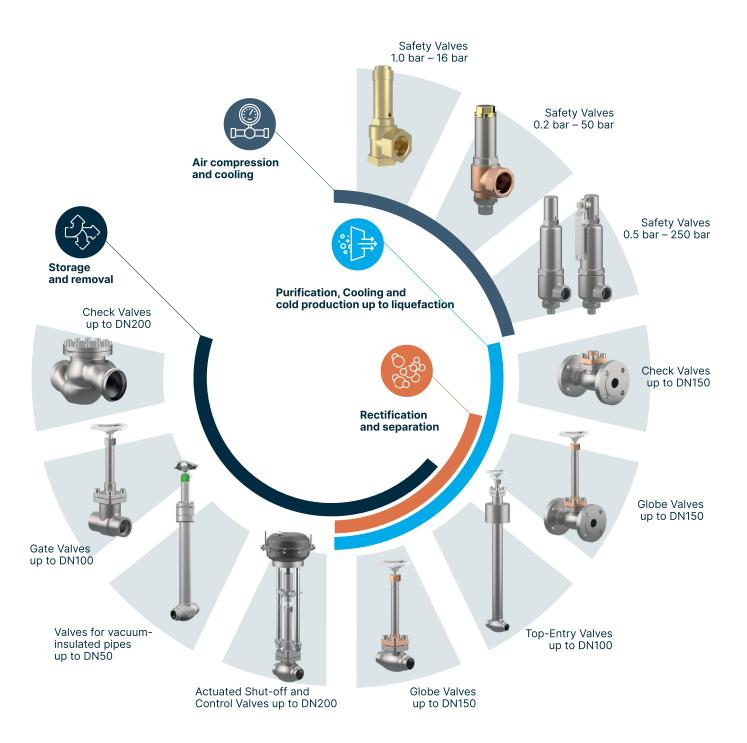


RECTIFICATION AND SEPARATION



STORAGE AND REMOVAL

## Our products in use





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#### **BUILT FOR AIR GASES**

# Your valve partner for air separation plants



### Reliable partner for valve solutions

HEROSE is a mechanical engineering company with over 150 years of experience in the manufacture of valves and safety valves.



#### Valve manufacturer as an expert for cryogenic applications

HEROSE offers more than 35 years of experience in cryogenic technology.



#### Technical advice for the design and selection of the right products for the processes.

A specially trained team for application advice and valve selection is available to you at all times.



#### **Detailed product documentation with extensive CAD data**

HEROSE offers a design programme with corresponding documentation for the calculation and design of valves. CAD data is also available for the valves used. You can use these for the integration in your drawings.



#### Reliable service and spare parts supply

A network of decentralised consignment warehouses and service partners ensures a high availability of spare valves and services.



#### Replacement of existing valves from other manufacturers

Older valves are often no longer available on the market. HEROSE offers possible replacement solutions with its extensive product portfolio.



#### Upcoming overhaul of an air separator

HEROSE GMBH

Armaturen und Metalle

We will discuss with you the solutions and valve components that you need for maintenance or overhaul - also in a personal visit on site.



#### Special requirements for valves and components for new builds and conversions

HEROSE offers customised valve designs, such as the operation of actuated valves with lower control air or the use of valves for vacuum-insulated pipelines for transporting cryogenic media.



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### **BUILT FOR AIR GASES**

## Our **global** accepted brand

HEROSE has various references within the air gas industry. The basis are the global relationships with the gas producing companies and original equipment manufacturer (OEM) for delivering valves and solutions for the production, transport and storage applications.

### ASU **new build projects** – extract of references

Location	Plant owner	Year of construction	Scope of supply
Jaza, Saudi Arabia	JV of Aramco, Air Products and ACWA Power	2019	Globe Valves, Top-Entry Valves, Check Valves, Safety Valves
Speyer, Germany	Messer	2019/2020	Top-Entry Valves, Gate Valves
Vratimov, Czech Republic	Messer	2021	Globe Valve with check function
Vila-seca, Tarragona/Spain	Messer	2021	Globe Valves, Top-Entry Valves, Check Valves, Safety Valves
Bor, Serbia	Messer	2022	Globe Valves
Nanjing, China	Yangzi Sinopec	2023	Globe Valves, Check Valves
Lünen, Germany	Messer	2024	Globe Valves, Top-Entry Valves, Check Valves, Safety Valves
Gent, Netherlands	Messer	2024	Globe Valves, Top-Entry Valves, Check Valves, Safety Valves

### ASU Maintenance, Repair and Overhaul (MRO) projects – extract of references

Location	Plant owner	Year of maintenance	Scope of supply
Porcheville, France	Linde	2019	Actuated Globe Valves
Delta, Ohio, USA	Messer	2022	Spares top works and gaskets
Sevilla, Spain	Nippon Gases	2022 and 2023	Globe Valves and Globe Valves spare parts
Creil, France	Messer	2023	Gate Valves, Globe Valves, Actua- ted Globe Valves, Safety Valves

